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Occupational Stress and Work Ability Among Nurses in an Academic Hospital

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Abstract

Background: Occupational stress is one of the key factors in reducing staff productivity in any organization with physical and psychological impacts on employees. Nursing is among the most stressful professions. Therefore, this study aimed to assess the extent of perceived level occupational stress and its association with work-related and non-work related variables as causes of stress and work ability among nurses in a Public Medical College Hospital.

Methods: A cross sectional study was done among nurses in Shaheed Suhrawardy Medical College Hospital (ShSMCH) during July 2015-June 2016 among 197 nurses, selected through a simple random sampling. Face to face interview was conducted, using a pretested semi-structured questionnaire. Occupational stress and work ability were measured using Expanded Nurses Stress Scale Questionnaire (ENSS) and Work Ability Index Questionnaire (WAIQ). Appropriate statistical analysis was performed to see the level of significance.

Results: Majority (69.0%) of the study population were between the age of 21 to 39 years, 94.9% were female, 68.0% were married, 79.2% were Muslim, 84.3% had diploma, 91.4% family income were equal or more than Tk 40,000, 95.5% did clinical work. Some 25.0% worked in medicine ward, 22.8% worked at surgery ward and 90.9% worked more or less than 50 hours per week. Only 5.1% found to be high stress and 94.6% low stress. Significant difference was found between female and male, occupational stress and religion, educational status, type of work, occupational stress and work ability ($p<0.05$).

Conclusion: Severe occupational stress is associated with reduced work ability. So, it is recommended to decrease occupational stress to increase work ability, although identification of sources of occupational stress seems necessary in order to adopt appropriate stress management strategies.

Keywords: Occupational stress, ENSS, Work ability, WAIQ

Introduction

Nursing is generally perceived as demanding profession. Along with the increased demand and progress in the nursing profession, stress among the nurses has also increased. Nursing profession follows a holistic approach, taking into account the person in totality in his or her environment. Nurses provide presence, comfort, help and support for people confronted with loneliness, pain, incapacity, disease and even death. The fact that nursing has been extensively and unfailingly recognized worldwide as a stressful job is therefore not surprising.[1] Stress is experienced when demands made on us outweigh our resources. Stress is the common phenomena being experienced by almost all individuals and it viewed as a real threat to the physiological and psychological response producing mental tension or physiological reactions leading to illness and which increases the demands for adjustment upon the individual.[2] WHO defines occupational stress

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"is the response people may have when presented with work demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope." [3] Work related stress is the response peoples may have when presented with work demands and pressures that are not matched to their knowledge and abilities and which challenges their ability to cope. There is often confusion between pressure or challenge and stress and sometimes it is used to excuse bad management practice.[4] Workplace stress can impact on employee productivity through increased absenteeism and presentism but with reduced productivity imposing a direct economic cost on employers and the society.[5] Work ability comprises physical, psychological, and social capacities. It is influenced by demographic, socio-economic, environmental and life style factors. Significant negative correlation between occupational stress and work ability.[16] Now-a-days, one of the most important personnel management challenges is to explore factors that stimulate or hinder the development of individual work ability and quality of life throughout a career. Maintaining clinical nurses quality of life and work ability is an important issue because it is the foundation for the well-being of the workforce.[18] Therefore, occupational stress is considered a challenge for the employers and because high level stress results in low productivity and other employee problems it is necessary that managers find a way of addressing the issue of occupational stress.[6] Nurses of public hospital of Bangladesh are indisputably challenging, because in daily basis they are facing multiple sources of stress and which affect their work ability. So, it is important to know how hospitals work and working environment affect nurses work ability and wellbeing. The present study was conducted to determine perceived level of occupational stress and its association with work and non-work related causes of stress and work ability among nurses.

Materials and Methods

A cross sectional study was done to assess the extent of perceived level occupational stress and its association with work-related and non-work related causes of stress among nurses in a Public Medical College Hospital, Dhaka from July 2015 to June 2016. Study population was nurses of Shaheed Suhrawardy Medical College Hospital (ShSMCH). Nurses who were working in this hospital for at least one year fulfilled the inclusion criteria. Exclusion criteria were unpleasant or stressful events within the last six months such as the death of the spouse or close relatives, divorce or pregnancy during the study period. Sample size was calculated on the basis of expected prevalence of stress among nurses. Considering data calculated from previous different studies about 58% of prevalence of occupational stress provided highest sample size i.e 347.[7] Study population was finite number that is 311. So, the following formula was used:

$$n = \frac{n_0}{1 + \frac{n_0}{N}}$$

Here, n= required Sample size = ? , n_0 = estimated sample = 347, N = finite population = 311. After calculation, sample size was found to bebe 164. But it was assumed that inflation of the sample size by 20% would be accommodate for any withdrawal from participation or non-response at different stages of data collection. Based on the above consideration finally the sample size was decided to include 164+33 = 197 study participants. Initially nurses were selected from employee list (sample frame) of 311 nurses working in different ward and unit of ShSMCH by simple random sampling. A total of 311 population were taken for the research. Among the study population finally 49 from medicine, 45 from surgery, 40 from gynae and obstretics, 32 from paedriatics, 31 from burn unit, ICU emergency were selected.

Data were collected by face to face interview with pretestedquestionnaire. The Questionnaire had three parts related to Work & non- work related variables, Expanded Nurses Stress Scale Questionnaire, Work Ability Index Questionnaire. Original Expanded Nursing Stress Scale (ENSS) consists of a 57 items, in this study only 38 items found to be necessary after pre testing. In order to compute stress score, all 38 items added together which was ranged from 0 to 152. Mild Level of Stress 0-38, Moderate Level of Stress 39-78, Severe Level of Stress 79-114, Very Severe Level of Stress 115-152. Then it was grouped to simplify

the data analysis which was low stress (0-76) and high stress (77-152). Work ability was measured by the Work Ability Index Questionnaire. The Work Ability Index (WAI) developed by the Finnish Institute of Occupational Health (FIOH) is a questionnaire-based method assessing perceived work ability. The WAI score was calculated from answers to seven items: current work ability compared with the life time best, work ability in relation to the demands of the job, number of current diseases diagnosed by a physician, estimated work impairment due to diseases, sick leave during the past 12 months, personal prognosis of work ability two years from now, and mental resources. The WAI score ranged from 7 to 49 points. Higher scores indicate better work ability. WAI is considered poor in the range 7-27, moderate in the range 28-36, good in the range of 37-43, and excellent in the range 44-49. Analysis of data was done using "Statistical Package for Social Science" (SPSS) programme. Descriptive statistics like frequency distribution, mean, median, mode, range, standard deviation etc. were calculated by SPSS program. Assess relationship between two categorical variables by Pearson's Chi-square (χ^2) test and t test 2x2 table at $p<0.05$ level of significance.

The ethical clearance was obtained from the Ethical Committee of the National Institute of Preventive and Social Medicine (NIPSOM). Before collection of data, permission was taken from authority of concerned department. Before interview, informed written consent was obtained from every employee. Confidentiality of data and privacy of participants were maintained strictly.

Results

Of the 197 nurses who participated in the study, 69.0% were age group 21 to 39 years, followed by 40 to 58 years 31.0% and their mean age was 35.9 (± 8.01) years. Almost 94.9% were female, 68.0% were married and 32% single. About 79.2% were Muslim and 20.8% Non-muslim, 84.3% had diploma, 11.2% had B.Sc in nursing and 4.6% had post graduate degree. Monthly household income of the respondents ranged from Tk 30,000 to 50,000 and their mean income was Tk 46751 ± 4557, Majority (91.4%) respondents' monthly household income was Tk 40,000 and above and 8.6% had less than Tk 40,000. Almost 95.5% respondents were involved in clinical work and 4.1% administrative works. Of them 24.9% of respondents worked in medicine, 22.8% in surgery, 20.3% in gynae and obstetrics, 16.2% at burn, emergency and ICU and 15.7% worked paedriatics wards. About 61.9% took training. About 57% worked 10 years or moreand 42.1% less than 10 years. Majority (52.8%) worked in day shift, 30.5% and 16.8% worked in evening and night shift respectively. Almost 90.9% nurses were worked 50 hours or more per week.

Table I: Information regarding work related variables (N=197)

Type of work	(n)	(%)
Administrative	8	4.1
Clinical	189	95.9
Name of ward/unit		
Medicine	49	24.9
Surgery	45	22.8
Gynae and Obstretics	40	20.3
Burn unit, ICU, Emergency	31	16.2
Pediatrics	32	15.7
Year of experience		
< 10 years	83	42.1
≥10 years	114	57
Shift of work		
Day Shift	104	52.8
Evening Shift	60	30.5
Night Shift	33	16.8
Hours of work per week		
< 50	18	9.1
≥ 50	179	90.1
Training		
No	75	38.1
Yes	122	61.9
Total	**197**	**100**

Most of them (94.6%) had been found to have low stress and 5.1% high stress.

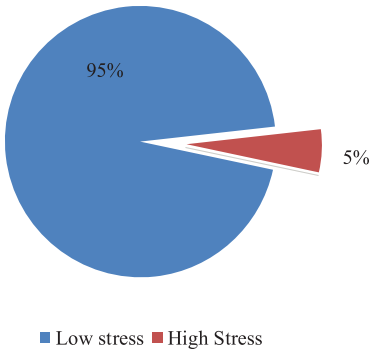

Figure 1: Distribution of Occupational stress level (n=197)

Almost 92.9% respondents had good to excellent work ability and 7.1% had less good work ability.

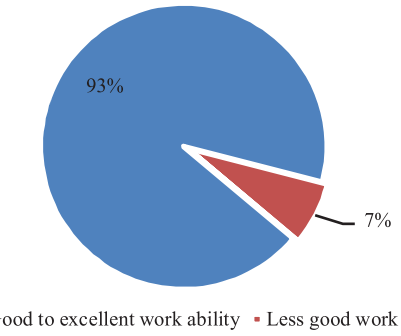

Figure 2: Distribution of work ability index category level

Significant association was observed between occupational stress level and gender.

Table II: Comparison of occupational stress score between sex

Occupational stress	Gender	N	Mean ± SD	*p* value
0-152	Female	187	52.68 ± 9.94	*p* = .03
	Male	10	64.7 ± 15.35	

Occupation stress was found more prevalent in Muslim, post graduate nurse and administrative workers (table III).

Table III: Association Between Occupational stress and religion and education level and type of job

Variables	Stress level		Comment
Religion	**Low stress**	**High stress**	**χ^2, df=1**
Muslim	151 (96.8%)	5(3.2%)	5.446
Non-muslim	36 (87.8%)	59 (12.2%)	*p* =.02
Educational status			
Diploma	161(97.6%)	4(2.4%)	14.606, *p* =.001
B.Sc in nursing	21(87.5%)	3 (12.5%)	
Postgraduate	5 (62.5%)	3(37.5%)	
Type of job			
Administrative	5(62.5%)	3(37.5%)	18.193
Clinical	182(96.3%)	7(3.7%)	*p* = .000

There was statistically significant association found between occupational stress and work ability index. ($p = 0.000$).

Table IV: Association between occupational stress and work ability

Stress level	Work ability index category		Total	Sig.
Low stress	177 (94.7%)	10 (5.3%)	187 (100%)	χ_1^2= 17.266
High stress	6 (60%)	4 (40%)	10 (100%)	
Total	183 (92.9%)	14 (7.1%)	197 (100%)	*p* = 0.000

A: Good to excellent work ability
B: Less good work ability

Discussion

The present study was carried out to assess the extent of perceived level occupational stress and its association with work related and non-work related variables as causes of stress among nurses in a Public Medical College Hospital. The result showed 73.4% the age group 21 to 40 years which was not similar to the study conducted in India where 22.1% were younger than 30 years old, 59.6% were aged between 30-40 years.[8] Almost 94.60% were female which was similar to other study where 93% female.[9] About 68% nurses were married which was not similar 80.4% to the study conducted in India.[10] Majority of the respondents 84.3% were had professional degree of diploma in nursing, 11.2% had BSc in nursing and 4.6% had post graduate degree which was not similar with the study of Jordan, where 90% bachelor and 5% post graduate.[11] Almost 91.4% of the respondents monthly household income were more than Tk 40,000 with a mean of the 46751 ± 4557 Tk. which was not similar to the study done in Bangladesh, where 74.8% monthly more than Tk 40,000.[12] About 24.9% worked in medicine ward, 22.8% worked at surgery ward, 20.3% worked in gynae and obstetrics ward, 16.2% worked at burn, emergency and ICU unit and 15.7% worked in paedriatics which was not similar to the study done in Uganda where 35.14% worked in medicine, 17.1% in surgery, 30.6% in obstetrics/gynecology wards.[13] Almost 95.5% of respondents were done mainly clinical job and 4.1% were do administrative works. Majority 61.9% had training related to job and 38.1% had no trained. Most 57.0% of the respondents' experiences of work were more than 10 years and 42.1% less than 10 years. Mean year of experience was 12.55 ± 4.80 years which was not similar to the study done in India where 44% having more than 10 year of experience and 56% had less than 10 years.[14] About 52.8% worked in day shift, 30.5% and 16.8% of the respondents worked in evening and night shift respectively. Almost 90.9% of the nurses were found to work within 50 hours or more per week and 9.1% less than 50 hours of work per week. Only 5.1% found to be high stress and majority 94.6% respondents had been found to have low stress. But in another study which was done in India found that 42% had high stress and 48.0% had low stress.[15] Most of the (92.9%) respondents had good to excellent work ability and 7.1% had less good work ability. This

was not similar to the study done in Iran where 98.8% and 0.8% of the subjects showed good to excellent and poor work abilities, respectively.[16] Significantly difference was found between female (52.68 ± 9.94) and male (64.7 ± 15.35) p = .000 and the study was similar to the finding of study done in Saudi Arabia where 77 % were female and 23% male nurses and significant statistical differences in perceived job related stress due to gender p = .038.[17] Occupational stress was found more prevalent in Muslim, post graduate nurse, administrative workers. This study was not similar to study done by Shivaprasad. But no significant association between education and occupational stress in study done by.[13] Majority 94.7% respondents had good to excellent work ability those who had low stress and 60% respondents had good to excellent work ability those who had high stress and statistically significant association was found between occupational stress and work ability index. (p <0.05) which was not congruent to study by Kordi. They showed no significant association between Occupational stress and Work ability (p > 0.05).[16]

Conclusion

According to the findings of the study, social and professional support should be provided to reduce high stress and increase work ability. Further studies are suggested to identify nurses, who are at risk of severe stress level and low work ability for effective interventions.

Conflict of interest: No conflict of interest.

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